

states that since the drawing was made from plants grown in the relatively humid climate of France, it is but natural that the leaves should be rather broad and the awns straight instead of geniculate. The same phenomenon may be observed in specimens of this species grown in Leningrad. Further allowance must be made for the individual imagination of the artist, who prepared Guettard's plates, whose knowledge of botany was evidently inadequate. This satisfactorily disposes of *Aristida avenacea* Guettard.

#### IRIDACEAE

**Gladiolus lilaceus** Houtt.; Merr. Jour. Arnold Arb. 19: 326. 1938.

Being unable to place this to my satisfaction an appeal was made to Dr. Compton, who states that Houttuyn's figure and description was shown to several botanists at Kirstenbosch, none of whom were able to identify it with certainty. He further states: "It may be a *Homoglossum* (formerly *Antholyza*) but the fact that the corolla is described as yellow removes it from any species known to us, although of course a colour-variety is not impossible."

#### PROTEACEAE

**Leucadendron pedunculatum** Meisn.; Merr. Jour. Arnold Arb. 19: 331. 1938, *cum syn.*

*Protea linearis* Houtt. was placed by me as a synonym of *Leucadendron pedunculatum* Meisn. with the statement that it was suspected, from Houttuyn's excellent figure, that the above species was represented. Dr. R. H. Compton, Director of the National Botanic Gardens at Kirstenbosch, confirms this, stating that Houttuyn's figure represents the male plant of *Leucadendron tortum* R. Br., as interpreted by Phillips & Hutchinson, = *L. pedunculatum* Meisn. N. E. Brown retains *Leucadendron tortum* (Thunb.) R. Br. for an entirely different species, the one described by Robert Brown in 1810 as *Leucadendron fusciflorum* R. Br.

#### MENISPERMACEAE

In accepting *Tinospora glabra* (Burm. f.) Merr. Jour. Arnold Arb. 19: 340. 1938 as the oldest valid name for a rather common Javan species, for which Diels accepted the invalid binomial *Tinospora crispa* (Linn.) Diels, Pflanzenr. 46(IV.94): 142. f. 49. 1910, non Miers, I am now able to adjust the synonymy of the much misunderstood *Tinospora crispa* (Linn.) Miers. Dr. D. F. van Slooten courteously supplied me with authentic material of the form Boerlage called *Tinospora Rumphii* Boerl.,

at the same time calling my attention to the obscure publication of the new binomial *Tinospora tuberculata* Beumée. The following supplementary data are supplied:

**Tinospora crispa** (Linn.) Miers\* in Hook. f. & Th. Fl. Ind. **1**: 183. 1855; Diels, Pflanzenr. **46(IV.94)**: 142. 1910, pro parte.

*Menispermum crispum* Linn. Sp. Pl. ed. 2, 1468. 1763.

*Cocculus crispus* DC. Syst. **1**: 521. 1818.

*Menispermum tuberculatum* Lam. Encycl. **4**: 96. 1797.

*Menispermum verrucosum* Flem. As. Res. **11**: 171. 1807 (Cat. Ind. Med. Pl. 171); Roxb. Fl. Ind. ed. 2, **3**: 808. 1832.

*Menispermum rimosum* sensu Blanco, Fl. Filip. 810. 1837, non Spreng.

*Tinospora Rumphii* Boerl. Cat. Hort. Bogor. 116. 1901; Diels, Pflanzenreich **46(IV.94)**: 135. 1910; Merr. Interpret. Rumph. Herb. Amb. 220. 1917, Sp. Blancoanae 145. 1918.

*Tinospora Thorelii* Gagnep. Bull. Soc. Bot. France **55**: 46. 1908, Lecomte, Fl. Gén. Indo-Chine **1**: 130. 1908.

*Tinospora crispa* Diels, Pflanzenr. **46(IV.94)**: 142. 1910, pro parte.

*Tinospora tuberculata* Beumée in Heyne, Nuttige Pl. Nederl. Ind. ed. 2, **1**: 619. 1927.

*Funis felleus* Rumph. Herb. Amb. **5**: 82, t. 44, f. 1. 1747.

This is a case of consistent modern misinterpretations of a Linnaean binomial, for no matter what material Miers may have had before him, *Tinospora crispa* Miers must be interpreted by the Linnaean binomial on which it was based, *Menispermum crispum* Linn. This Linnaean binomial was based wholly on "*Funis quadrangularis*, Rumph. amb. 5, p. 83, t. 44, f. 1," which, as I noted, this Journal **19**: 341. 1938, involved some confusion, on the part of Linnaeus, between two entirely different plants, *Funis quadrangularis* Rumph., fig. 2, and *Funis felleus* Rumph., fig. 1, both illustrated on the same plate. The former is *Cissus quadrangularis* Linn., and the latter is the plant with which we are concerned; Linnaeus' reference is to fig. 1. There is no possible doubt as to what he actually intended by his *Menispermum crispum*, for he cites the menispermaceous figure, not the vitaceous one. And yet, Diels, in his confused synonymy of *Tinospora crispa* (Linn.) Diels, cites Rumphius' distinctly good illustration of *Funis felleus*, the form with which we are concerned, i.e., the one with broadly ovate, prominently cordate leaves and very verrucose stems, in his synonymy of what is an entirely different species. The latter as illustrated and described by him, fig. 49, D-O, is a form with narrower oblong leaves which are only subtruncate or slightly cordate, and smooth stems. This is clearly the one described by Burman f. as

\*In many references this binomial is credited to Miers, Ann. Mag. Nat. Hist. **11**. 7: 38. 1851; it does not there appear.

*Menispermum glabrum* Burm. f. Fl. Ind. 216. 1768 = *Tinospora glabra* (Burm. f.) Merr. Jour. Arnold Arb. 19: 340. 1938. Most of the synonyms cited by Diels belong with *Tinospora crispa* (Linn.) Miers, the form described in detail by Diels as *Tinospora Rumphii* Boerl. Beumée, in replacing *Tinospora Rumphii* Diels by the older *Tinospora tuberculata* (Lam.) Beumée, overlooked the fact that *Menispermum tuberculatum* Lam. was essentially only a new name for *Menispermum crispum* Linn., and by citing *Tinosporum crispum* Linn., pro parte, failed to realize that Linnaeus had no actual specimen, and that the sole basis of the Linnaean binomial was the Rumphian illustration. There is no possible "pro parte" unless we wish to interpret Linnaeus' inadvertent confusion of *Funis quadrangularis* Rumph. (*Cissus quadrangularis* Linn.) and *Funis felleus* Rumph. (*Menispermum crispum* Linn.) as noted above. There is no specimen in the Linnaean herbarium, Linnaeus' "Habitat in Bengala" having been taken from Rumphius' statement under *Funis quadrangularis* "Ex Bengala in Bataviam translatus erit hic funis —."; this appertains to *Cissus quadrangularis* Linn., not to *Menispermum crispum* Linn.

*Tinospora crispa* (Linn.) Miers (not *Tinospora crispa* Diels) is widely distributed in southern Asia and in Malaysia, and is certainly an introduced plant in the Malay Archipelago as it is in the Philippines; Rumphius notes that his *Funis felleus* had been introduced into Amboina in about 1690 but does not indicate its source. It owed its wide distribution to its highly reputed medicinal qualities, the juice being very bitter. It is excellently represented by Merrill, *Species Blancoanae* 903, stems and staminate flowers, March, 1915, and 1003, leaf specimen from the same plant, October, 1916, this plant being leafless at the time of anthesis. These specimens conform entirely to *Tinospora Rumphii* Boerl., having but three small petals instead of the normal six petals that are found in the other known species of the genus. The fresh branches are much more prominently verrucose than are the dried ones, the Rumphian illustration having been drawn from a fresh specimen.

Dr. Beumée apparently realized the confusion caused by Diels' erroneous treatment of *Tinospora crispa*, and attempted to establish valid names for the two species confused in the latter's consideration, but failed to carry through the interpretation of *Menispermum crispum* Linn. to its logical conclusion. In publishing *Tinospora tuberculata* (Lam.) Beumée, for what proves to be the true *Tinospora crispa* (Linn.) Miers, he also attempted to establish a valid binomial for the other part of what Diels included in *Tinospora crispa* (Linn.) Diels in *Tinospora coriacea* (Blume) Beumée. This falls as a synonym of *Tinospora glabra* (Burm. f.) Merr.:

***Tinospora glabra*** (Burm. f.) Merr. Jour. Arnold Arb. 19: 340. 1938.

*Menispermum glabrum* Burm. f. Fl. Ind. 216 (err. typ. 316). 1768.

*Cocculus coriaceus* Blume, Bijdr. Fl. Nederl. Ind. 25. 1825.

*Cocculus bantamensis* Blume, op. cit. 26.

*Tinospora uliginosa* Miers, Ann. Nat. Hist. 111. 13: 321. 1864, *nomen nudum*, Contrib. Bot. 3: 35. 1871; Hook. f. Fl. Brit. Ind. 1: 97. 1872; King, Jour. As. Soc. Bengal 58(2): 378. 1889 (Mater. Fl. Malay. Penin. 1: 22).

*Tinospora coriacea* Beumée in Heyne, Nuttige Pl. Nederl.-Ind. ed. 2, 1: 619. 1927.

*Tinospora crispa* sensu Boerl. Cat. Hort. Bogor. 116. 1901, non Miers.

*Tinospora crispa* Diels, Pflanzenr. 46(IV.94): 142. incl. f. 49, D-O. 1910, pro parte, non Miers.

This species differs from true *Tinospora crispa* (Linn.) Miers, not only in the details of its flowers, but also in its narrower, normally oblong, slightly cordate to subtruncate leaves, and its smooth stems. The full extent of its range is uncertain because that given by Diels was due to his inclusion of two very distinct species in his concept of *Tinospora crispa* Diels (non *Menispermum crispum* Linn.). It is common in Java, occurs also in Sumatra, probably in the Malay Peninsula, in spite of the fact that Ridley does not include it, in Borneo, and in the Aru Islands.

ARNOLD ARBORETUM,

HARVARD UNIVERSITY.

## PROPOSED AMENDMENTS TO THE INTERNATIONAL RULES OF BOTANICAL NOMENCLATURE

ALFRED REHDER

THOUGH NO MORE FUNDAMENTAL CHANGES in the Rules of botanical nomenclature should be made, there are a number of minor corrections and adjustments which seem desirable in the articles and the recommendations, particularly in cases where even modern usage varies either for the reason that the rules are not quite clear or that their meaning is frequently misunderstood. Therefore, the following amendments are proposed for consideration at the next International Botanical Congress at Stockholm.

### ARTICLE 26

Names of subgenera and sections are *usually*<sup>1</sup> substantives resembling the names of genera. Names of subsections and other lower subdivisions of genera are preferably adjectives in the plural number agreeing in gender with the generic name and written with an initial capital, or their place may be taken by an ordinal number or a letter.

### PROPOSED CHANGE

Names of subgenera are *always* and names of sections *usually* substantives resembling the names of genera. Names of subsections and other lower divisions of genera are preferably adjectives in the plural number agreeing in gender with the generic name and written with an initial capital, or their place may be taken by an ordinal number or letter. *The names of all coördinated subdivisions of a genus take the same form, either substantives or adjectives in the plural number.*

### DISCUSSION

It is confusing and makes a clear presentation of the subdivisional system of a large genus difficult, to have the names of coördinated subdivisions of different grammatical form, as e.g. *Ribes* sect. *Grossularia* (A. Rich) 1. *Robsonia* (Berl.) and sect. *Ribesia* DC. 1. *Nigra* Engl. (Engler in Nat. Pflanzenfam. III. 2<sup>a</sup>: 89, 91. 1890); and *Ribes* subgen. "*Fasciculatae*" Nakai and subgen. *Berisia* Spach, subgen. *Ribesia* Maxim,

<sup>1</sup>The italicized words indicate changes made in the wording of the articles.